Oracle Utilities Live Energy Connect

RTI Platform Release Notes

Release 6.3.4.0.4

November 2020

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ORACLE®

Oracle Utilities Live Energy Connect RTI Platform Release Notes, Release 6.3.4.0.4

Current Release

This section focuses on enhancements and known issues in RTI Platform Version 6.3.4.0.4.

Note: Oracle Utilities acquired the RTI Platform in April 2020. The Oracle Utilities product known as Oracle Utilities Live Energy Connect was formerly called the LiveData Utilities RTI Server Platform.

Important! Using RTI Server Version 6.3.4.0.4 requires you to accept a Software License Agreement with Oracle Utilities.

RTI Platform 6.3.4.0.4

Real Time Integration (RTI) Server

- Fixed DNP time synch issue related to incorrect sequence numbers.

Note: If your machine already has Python 2 installed and it is older than version 2.7.18, either uninstall Python 2 or upgrade to Python 2.7.18 before installing the Live Data Utilities RTI Server Platform. The Live Data Utilities RTI Server Platform installer will install Python 2.7.18 if it is not already installed on the machine.

Note: Uninstalling or changing the version of Python 2 on your machine may affect other software running on that machine.

Known Issues in RTI Platform

RTI Configuration Manager (RCM)

Problem: Running multiple instances of RCM simultaneously on the same machine can lead to unexpected behavior and possible crashes in RCM (i.e. the GUI app, not RTI Server).

Solution: Do not run multiple instances of RCM on one machine simultaneously. RCM is designed to edit and monitor multiple RTI Server configurations and instance by using configuration aliases.

Previous Releases

RTI Platform 6.3.4.0.3

Real Time Integration (RTI) Server

- Fixed regression in MASTER_RESET_FLAG behavior when local VCC is acting as an ICCP server only
- Fixed regression in in Modbus Master VMD that caused Modbus TCP/IP read request messages to be malformed.

RTI Platform 6.3.4.0.2

Real Time Integration (RTI) Server

- Added MASTER_RESET_FLAG association control flag.
- Fixed bug preventing disabling of outbound ICCP associations when verifying ICCP parameters failed.
- The two Stunnel Windows services that the LiveData Utilities RTI Server Platform installer now registers at the time of installation are called "LiveDataClientTunnel" and "LiveDataServerTunnel". These Stunnel services need to be managed by the user through the Window Services Manager.

RTI Platform 6.3.4.0.1

Real Time Integration (RTI) Server

- Fixed a regression found in the previous release that left the server unable to load custom macros that used the SharedScript Python module.
- Upgraded open source software used with Secure ICCP configurations. OpenSSL was upgraded from version 1.0.1g to version 1.1.1g (OpenSSL's current LTS release). Stunnel was upgraded from version 5.53 to 5.56.
- RTI Server now registers two Stunnel Windows services at the time of installation. These Stunnel services need to be managed by the user through the Window Services Manager. In previous releases, the RTI Service launched Stunnel processes.
- This release does not have a Secure ICCP Certificate Manager application. Instead, follow the procedure for deploying certificates described in the *Secure ICCP Certificate Deployment Procedure for RTI Server* document.
- Moved open source licensing attributions for third-party software included or used in RTI Platform 6.3.4.0.1 to the *Licensing Information User Manual for RTI Platform 6.3.4.0.1 Installation Guide* document.

RTI Platform 6.03.0004

Real Time Integration (RTI) Server

- This release can be used following LiveData Utilities standard Software License Agreement. Using any forthcoming releases will require signing a new Software License Agreement with LiveData Utilities.

- Made logging more configurable by organizing RTI Server functions into "logging modules" whose level of logging can be individually specified in the livedata.ini file.
- Created option to log all ICCP traffic (across multiple VCCs) in livedata.ini file.
- The 6.03.004 release of the RTI Platform does not have a License Manager application,- but you are still obligated to follow the terms of the Software License Agreement.
- Changed behavior of our DNP Master functionality to close and reinitiate connections if there is a failure receiving a response from an outstation.
- Created a new dataflow filter that can be used to bridge 2-way connectors to 1-way output connectors (useful in control applications).
- Added diagrams to the *Certificate Deployment Procedure for Using Secure ICCP with RTI Server* document.
- Edited release notes of previous RTI Platform releases for readability and style.
- Added an appendix of open source licensing attributions for third-party software included in the RTI Platform or used by LDU to the *RTI Platform Installation Guide* document.

RTI Configuration Manager (RCM)

- Simplified the RCM tutorial included in the *RTI Configuration Manager User Guide*.
- Added a "Disabled" log level option.
- Updated tool tips for certain filter nodes based on customer feedback.

RTI Asset ID Manager (AIM)

- Added a "Restarting" state to the reporting of RTI Server states when reloading batch files.
- Added configurable file size limits and roll-over settings to the tm.log file created by AIM.

RTI Platform 6.03.002

RTI Server

- Launching the RTI Platform Installer no longer requires a password.
- Added ICCP Block 4 support for dual-role VCCs (VCC's that are both a client and a server).
- Added the ability to set initial node values of points in a server VCC.
- Changed behavior of the RTI server so that internal points available to OPC UA clients without a timestamp will have their OPC Source timestamp set to null instead of using the RTI Server's local time.

RTI Platform 6.03.001

RTI Server

- Implemented a RESTful interface for RTI Server (See the *RTI REST API Specification 1.5* for details).
- Upgraded to Unified Automation OPC UA SDK version 2.6.3.
- Enhanced OPC UA functionality to support interoperability with ICCP Block 4 (Message/File Transfer).
- Enhanced the OPC UA client point fanout to support different ICCP types.

- Updated implementation of Secure ICCP so that it uses Stunnel 5.53. If Stunnel issues any critical security fixes, you can now upgrade Stunnel without upgrading LiveData Utilities RTI Server.
- Removed unwanted, repeated log messages with SOAP content generated when RCM reads certain RTI variables. To log these messages, set the SpecialLogging parameter of the LiveData.ini file to 16 (i.e. "SpecialLogging =16").
- Implemented consistent log message indentation and fixed known spelling errors in log messages.
- Changed the default log level to 2. At this level, the RTI Server will log: errors (0), warnings (1) and major events (2).
- Added the VCC name in log messages generated while making ICCP associations including domain names if the association fails.
- Fixed a bug so that RTI Server no longer crashes at startup when running on CPUs without AVX instructions.
- Fixed a bug that could have led to memory corruption and crash when MMS coonnections are attempted with 0-length source TSEL values.
- Fixed LiveData Utilities RTI Stream for InfluxDB to manage incoming NaN values correctly.
- Deprecated the CircumventSiemensBug flag (for VCCs) in favor of the backward-compatible SiemensCompatibility flag. If you need to work around Siemen's non-conforming naming convention, set the SiemensCompatibility flag to 1.

RTI Platform 6.03.000

RTI Server

- Upgraded our developer build-tools to Visual Studio 2017.
- Fixed dynamic loading and unloading of batch files via external scripts.
- Enlarged the default value of the TCP/IP send buffer to 4 MB to improve performance of communication between VCCs when sending outbound data.
- Simplified the procedure for deploying certificates used in Secure ICCP. See the *LiveData Utilities: RTI Platform Installation Guide* for more information.
- Added an option to start the transmission of a requested ICCP Data Set Transfer Set immediately,- even when a remote ICCP client delays the requested DS transfer set start time.
- Changed behavior of the "Stale time**"** property of VccAssocOutControl and VccAssocInControl nodes. RTI Server will now log an error if this property is specified for a VCC that is only a server. If specified on a client VCC, points from a stale association are flagged using quality bits.
- Fixed RTI's OPC UA server to ensure that all per point ICCP transfer set data changes are relayed to connected OPC UA clients.
- Improved the implementation of OPC UA security to allow customers to store certificates in the Windows Certificate Store.
- RTI Server will now notify the ICCP client if a write to a remote OPC UA device fails
- Improved mapping between the OPC UA status and ICCP quality bits.
- Fixed RTI's OPC UA server to report a connection timeout if an RTI OPC UA client has problems connecting to a remote SCADA OPC UA server.
- Fixed RTI's OPC UA server to report if RTI's OPC UA client has difficulties subscribing to data points from SCADA's OPC UA server.

- Added ability for RTI's OPC UA to report changes in the RTI's master control variable by indicating this status in the quality bits of the ICCP client
- Fixed RTI Server to set the status of each RTI OPC UA server point or points to indicate when a subscription to one or more remote ICCP server points fails. Even after the initial subscription has succeeded, if the ICCP peer at the remote site aborts and reconfigures, then RTI Server resets the status of each RTI OPC UA server point or points to bad, so no points are lost in the reconfiguration.
- Improved RTI's OPC UA server to set the quality of each point or points to bad if transmission of a transfer set times out.
- Eliminated a possible race condition that occurs when an OPC UA client tries to connect while RTI's ICCP server is starting up. Setting initial values for points (which are to be transferred to a peer ICCP client) before an RTI OPC UA client connection is made ensures that the ICCP client will never get a mix of initial and actual data.

RTI Asset ID Manager (AIM)

- Updated the RTI Asset ID Manager menu prompts.

RTI Platform 6.02.008

RTI Server

- Added a back-pressure mechanism and an internal "dataflow circuit breaker" to provide flowcontrol in high volume MMS/ICCP applications. These are now set by default in the RTI server and are configurable in the LiveData.ini file.
- Enhanced ICCP Block 5 (Control) functionality.

RTI Platform 6.02.007

RTI Server

- Disabled logging from internal SOAP server unless it is explicitly enabled.

RTI Platform 6.02.006

RTI Configuration Manager (RCM)

- Improved the log level resolution.

RTI Server

- Implemented licensing and subscription logic for OPC UA devices
- Improved remote batch file loading.
- Added the ability to specify use of Secure ICCP from batch files.

RTI AIM

- Revised the *RTI Asset Manager User Guide* document.

RTI Platform 6.02.005

RCM

- Streamlined the configuration of OPC UA devices.
- Improved the handling of subtask cleanup for connectors and added additional error handling.
- Discovered and fixed memory leaks.

RTI AIM

- Introduced RTI Asset ID Manager (AIM) as a LiveData Utilities product. AIM interacts with your SCADA system, RTI Server, and Oracle Utilities NMS or CGI OMS. It creates and loads RTI batch files that it generates from existing SCADA and Management System configurations.
- AIM supports one-to-many relationships between a given device in a Management System and its related SCADA points.

RTI Connect for InfluxDB

- Created an interface for storing RTI-managed data in an InfluxDB database (historian).
- Data retention can be specified for 3 categories of data: analog, discrete, and one custom category.
- Downsampling can be specified for 2 of the categories of data: analog and discrete.

RTI Platform 6.02.003

RCM

- Fixed an issue with duplicate keys in the LDIB table.

RTI Server

- Enhanced the functionality of using RTI Server OPC UA Server and Client.

RTI Platform 6.02.002

RCM

- Added the capacity to perform background updates to configuration databases and automatically refresh the Node Table as the updates are made.
- Added the ability to create a separate service for each alias. You can now manage multiple RTI Server instances on the same machine with RCM. This is useful for testing RTI Server configurations.
- Added the ability to delete a configuration alias.
- Added the ability to gather all system diagnostic data into a single compressed file to aid in remote system debugging.
- Added the capacity to select an editor, such as Notepad++, to open a log from RCM directly. For example, you could select Notepad++ and be able to see the RTI Server write to the log as you are examining it in Notepad ++.

RTI Server

- Fixed discovered bugs and improved the functionality of using RTI Server as an OPC UA Server and Client.
- Added the ability to execute remote batch and command files.

RTI Platform 6.02.001

RCM

- Fixed discovered bugs and made improvements to the GUI.

RTI Platform 6.02.000

RCM

- Updated the installation wizard.
- Added the DISCRETE flag to the flags field for the ControlFromOpcUa, ControlToOpcUa, and ControlXToOpcUa nodes.
- Added the ability to find the configuration of the MMS Listen IP address within the LiveData.ini file.
- Improved the handling of connector indices.
- Fixed a bug that caused RCM to be unable to unload batch files in certain states.
- Fixed a bug that cause RCM to crash if "Restore default layout" or "Save as" was selected.
- Fixed the "Help->About" link to display the product version number.
- Fixed a bug that caused RCM to display the server state as RUNNING after the RTI server had been stopped.

RTI Server

- Updated to Python 2.7.13.
- Updated to Apache HTTP Server 2.2.32**.**

RTI Platform 6.01.010

RTI Server

- Expanded the functionality of RTI Server to support multiple VMD's for OPC UA and OPC DA by providing the ability to enable or disable OPC DA.
- Fixed a bug in which RTI Server occasionally crashed while editing the configuration in RCM.

RTI Platform 6.01.009

RTI Server

- Fixed an issue with MMS-DL string parsing that prevented 8-bit characters from being interpreted as valid.

RCM

- Improved how the Variable Access tool displays strings and structures
- Fixed the way the Properties Panel is displayed so that it no longer occasionally jiggles. • Fixed the Node Monitor so that it collapses VMDs efficiently

RTI Platform 6.01.008

RTI Server

 • Expanded OPC DA support by adding macros and scripts to process ICCP Block 4 and Block 5 data.

RTI Platform 6.01.007

RTI Server

- Fixed underlying causes potential RTI crashes during startup.
- Fixed a bug in which RTI server would not restart after crashing for certain configurations

RCM

- Improved RCM's method for building connectors.
- Fixed the checkbox that enables Secure ICCP.
- Addressed the issue of pythonw.exe stopping while Configuration Manager is running. Configuration Manager now provides an informative message when this occurs.
- Improved logging for remote devices.
- Changed the way items in a Combine Group are displayed.
- Enabled RCM to display selected node even if it is hidden within a collapsed Combine Group.
- Fixed bug in which Configuration Manager occasionally crashed when editing ruled in the Node Filter tool.

RTI Platform 6.01.006

RTI Server

- Added OPC UA support. Currently the following OPC UA features are not supported: ICCP types with a COV, Secure OPC UA, configurability of the mapping between OPC quality and ICCP quality, group controls.

RCM

- Fixed Configuration Manager to provide the Network Monitor by default
- Added a button to open a log file in a text editor.
- Provided synchronizing of server state and related data to ensure that the data is correctly displayed when changing configuration aliases.
- Fixed various bugs related to unnecessary or erroneous messages.
- Allowed deletion of connectors.
- Allowed configuration of SOAP port used for a configuration alias and RTI server instance
- Fixed underlying cause of spurious RCM crashed when reloading macros
- Created requirement of Administrator privelages to alter the registry for an RTI Server Service from RCM.

RTI Platform 6.01.005

RCM

- Eliminated extraneous entries from the LDIB Editor table.

- Added the version number of LiveData RTI Server to the About panel within Help.
- Added functionality to RTI Configuration Manager to scan for the DataflowMacros.pdi version when you start Configuration Manager, when you select a new alias, or when you import a different configuration.
- Added warning message for outdated macros loaded in a configuration.
- Decreased the time that it takes to reload a batch file using the Incremental option.
- Improved the order of the fields in each of the VMD, Setup, Input, Filter, Output, and Connector creation forms.

RTI Platform 6.01.004

RTI Server

- Identified and fixed root causes for RTI crashes during shutdown specifically when using either the OPC server.
- Fixed an OPC UA timestamp error.
- Simplified the OPC UA macros.
- Fixed a buffer overrun that could potentially cause a crash.
- Added a feature that allows the OPC UA client and server to read and write real values.

RCM

- Added the Copy VMD function.
- Fixed a bug that occurred if a node had implicit connectors.
- Fixed an issue where the "busy" modal dialog disappeared prior to the change taking place.
- RCM now allows you to select an alias at startup.
- Fixed a bug that caused the Apply button to remain active after property changes were made.
- Fixed a bug that prevented the user from renaming a copied or cloned VMD.
- Fixed a number of bugs that caused RCM to crash in certain circumstances that include the following: the default directory had no path in common with the "LiveData\ProgramData" directory, a user started to create a connector or VMD and then decided to cancel out of the form, an invalid string entry in a form, using RCM via Remote Desktop Protocol (RDP).

RTI Platform 6.01.003

RTI Server

- Added the ability for the QualOperate filter node to support the Data_StateQ ICCP type.
- Fixed a bug in the configuration macros regarding ICCP Block 4.

RTI Platform 6.01.001

RTI Server

- Fixed servxtnt.exe crash on startup. Prior to this fix, servxtnt.exe could crash after loading a configuration using an unlicensed feature.

RTI Platform 6.01.000

RTI Server

- Fixed deadlock in logging mechanism that could prevent logging to the LIVEDATA.LOG file until LiveData RTI Server was restarted.
- Enhanced RTI Servers support for Microsoft Scripting Host-based scripts (e.g. .vbs, .js) to support hosting 64-bit COM controls.
- Added some internal fixes and optimizations.

RCM

- Introduced a native Windows RTI Configuration Manager (RCM) application as a replacement for the web-based Configuration Manager tool.

RTI Platform 6.00.009

RTI Server

- Legacy Configuration Tool) Fixed bug in ICCP Block 8 that prevented Block 8 message distribution after a failure.
- Elevated LDTray system tray app privileges (when necessary) to communicate with Configuration Manager.
- Set the default "[LiveData.Cluster]MonitorApache" value to "FALSE" in the LiveData.ini file.
- Fixed a bug related to crashes in some configurations using Modbus TCP/IP

RTI Platform 6.00.008

RTI Server

- Fixed connector optimization bugs in Legacy Configuration Tool.
- Added RTI Server-side support for RTI Tag Manager.

RTI Platform 6.00.007

RTI Server

- Fixed bug in non-incremental batch load with sharing in Legacy Configuration Tool
- Added some internal fixes and optimizations.

RTI Platform 6.00.006

RTI Server

- Made provision for overriding the ICCP standard in use when communicating to ICCP systems and devices that use the Draft ICCP Standard (DIS) or the UCA ICCP Standard.

RTI Platform 6.00.005

RTI Server

- Fixed some bugs and made performance improvements related to batch file processing.

RTI Platform 6.00.004

RTI Server

- Delayed the agent RTX writing an initial value to a remote VMD until an association has been established.

RCM

- Created a "htdocs-webapp" directory under Apache to avoid Apache error.log reporting this folder missing.
- Fixed bugs and enhanced the configuration database interface.

RTI Platform 6.00.000

RTI Server

- Added DNP TCP/IP multidrop, which allows communication with multiple DNP devices with distinct station numbers over a single TCP/IP connection.
- Added the DnpEnableUnsolicited macro to allow initiation of unsolicited DNP messages.
- Optimized script-based DNP dataflow, reducing memory footprint and increasing data throughput for large DNP configurations.
- Added another script RTX to allow truly concurrent Python scripting on multi-core machines.
- Added Incremental batch file load/unload – which facilitates loading/unloading of batch file change deltas instead of complete unload/reload.
- Fixed failure to prevent write bouncing on associations.
- Made improvements to batch load and server startup performance.
- Improved internal core server performance.